**SECTION 1: Identification**

1.1. Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>N-TRIMETHOXYSYLPROPYL-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>SIT8414.0</td>
</tr>
<tr>
<td>Product form</td>
<td>Mixture</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Formula</td>
<td>C18H42ClNO3Si</td>
</tr>
<tr>
<td>Synonyms</td>
<td>N,N,N-TRIBUTYL-3-(TRIMETHOXYSYL)-1-PROPANAMMINIUM CHLORIDE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOMETHOSILANE</td>
</tr>
</tbody>
</table>

1.2. Recommended use and restrictions on use

Recommended use: Chemical intermediate

1.3. Supplier

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015  F 215-547-2484  (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com  www.gelest.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

**SECTION 2: Hazard(s) identification**

2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>GHS-US classification</th>
<th>H225  - Highly flammable liquid and vapor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquids Category 2</td>
<td>H301  - Toxic if swallowed</td>
</tr>
<tr>
<td>Acute toxicity (oral) Category 3</td>
<td>H311  - Toxic in contact with skin</td>
</tr>
<tr>
<td>Acute toxicity (dermal) Category 3</td>
<td>H331  - Toxic if inhaled</td>
</tr>
<tr>
<td>Acute toxicity (inhalation/vapor) Category 3</td>
<td>H315  - Causes skin irritation</td>
</tr>
<tr>
<td>Skin corrosion/irritation Category 2</td>
<td>H318  - Causes serious eye damage</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation Category 1</td>
<td>H370  - Causes damage to organs</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure) Category 1</td>
<td>H36  - May cause drowsiness or dizziness</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure) Category 3</td>
<td></td>
</tr>
<tr>
<td>Full text of H statements : see section 16</td>
<td></td>
</tr>
</tbody>
</table>

2.2. GHS Label elements, including precautionary statements

<table>
<thead>
<tr>
<th>GHS US labeling</th>
</tr>
</thead>
</table>
| Hazard pictograms (GHS US) | ![Hazard Pictograms](image)
| Signal word (GHS US) | Danger |
| Hazard statements (GHS US) | H225 - Highly flammable liquid and vapor |
| | H301 - Toxic if swallowed |
| | H311 - Toxic in contact with skin |
| | H331 - Toxic if inhaled |
| | H315 - Causes skin irritation |
| | H318 - Causes serious eye damage |
| | H36  - May cause drowsiness or dizziness |
| | H370 - Causes damage to organs |
| Precautionary statements (GHS US) | P280 - Wear protective gloves/protective clothing/eye protection/face protection. |
| | P210 - Keep away from heat, open flames, sparks.  - No smoking. |
| | P240 - Ground/Bond container and receiving equipment |
| | P241 - Use explosion-proof electrical equipment |
| | P242 - Use only non-sparking tools. |
| | P243 - Take precautionary measures against static discharge. |
| | P260 - Do not breathe vapors. |
| | P264 - Wash hands thoroughly after handling. |
| | P270 - Do not eat, drink or smoke when using this product. |
| | P271 - Use only outdoors or in a well-ventilated area. |
| | P303 - Rinse mouth. |
| | P301+P310  - If swallowed: Immediately call a doctor |
N-TRIMETHOXYSILYLPROPYL-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol
Safety Data Sheet

P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P307+P311 - If exposed: Call a poison center/doctor
P321 - Specific treatment (see first aid instructions on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Keep in a cool place
P405 - Store locked up.
P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Hazards not otherwise classified (HNOC)
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
</table>
| Methanol | (CAS No.) 67-56-1 | > 45 | Flam. Liq. 2, H225
Acute Tox. 3 (Oral), H301
Acute Tox. 3 (Dermal), H311
Acute Tox. 3 (Inhalation/vapour), H331
Skin Irrit. 2, H315
Eye Irrit. 1, H318
STOT SE 1, H370
STOT SE 3, H336 |
| N-Trimethoxysilylpropyl-n,n-n-tri-n-butylammonium chloride | (CAS No.) 143203-33-2 | > 45 | Skin Irrit. 2, H315
Eye Irrit. 2A, H319 |
| 3-Chloropropyltrimethoxysilane | (CAS No.) 2530-87-2 | < 5 | Flam. Liq. 4, H227
Skin Irrit. 2, H315
Eye Irrit. 2A, H319 |

Full text of hazard classes and H-statements: see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures general: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label. Call a POISON CENTER or doctor/physician.

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact: Wash with plenty of soap and water. Get medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

**Symptoms/effects**: Causes damage to organs.


**Symptoms/effects after skin contact**: Toxic in contact with skin. Causes skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.

**Symptoms/effects after eye contact**: Causes serious eye damage.

**Symptoms/effects after ingestion**: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness. Onset of symptoms may be delayed up to 48 hours.

**Chronic symptoms**: Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.
4.3. Immediate medical attention and special treatment, if necessary

NOTE TO PHYSICIAN: The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 mls/hour) allows methanol to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuitable extinguishing media</td>
<td>Do not use straight streams.</td>
</tr>
</tbody>
</table>

5.2. Specific hazards arising from the chemical

<table>
<thead>
<tr>
<th>Fire hazard</th>
<th>Highly flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosion hazard</td>
<td>May form flammable/explosive vapor-air mixture.</td>
</tr>
</tbody>
</table>

5.3. Special protective equipment and precautions for fire-fighters

<table>
<thead>
<tr>
<th>Firefighting instructions</th>
<th>Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection during firefighting</td>
<td>Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.</td>
</tr>
</tbody>
</table>

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

<table>
<thead>
<tr>
<th>General measures</th>
<th>Eliminate every possible source of ignition. Use special care to avoid static electric charges.</th>
</tr>
</thead>
</table>

6.1.1. For non-emergency personnel

<table>
<thead>
<tr>
<th>Protective equipment</th>
<th>Wear protective equipment as described in Section 8.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency procedures</td>
<td>Evacuate unnecessary personnel.</td>
</tr>
</tbody>
</table>

6.1.2. For emergency responders

<table>
<thead>
<tr>
<th>Protective equipment</th>
<th>Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: &quot;Exposure controls/personal protection&quot;.</th>
</tr>
</thead>
</table>

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

<table>
<thead>
<tr>
<th>For containment</th>
<th>Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods for cleaning up</td>
<td>Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.</td>
</tr>
</tbody>
</table>

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

<table>
<thead>
<tr>
<th>Additional hazards when processed</th>
<th>Handle empty containers with care because residual vapors are flammable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautions for safe handling</td>
<td>Avoid all eye and skin contact and do not breathe vapor and mist. Containers must be properly grounded before beginning transfer. Provide good ventilation in process area to prevent accumulation of vapors. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.</td>
</tr>
<tr>
<td>Hygiene measures</td>
<td>Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.</td>
</tr>
</tbody>
</table>

7.2. Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Technical measures</th>
<th>Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof ventilating equipment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage conditions</td>
<td>Keep container tightly closed. Store in sealed containers in the dark. Store locked up.</td>
</tr>
<tr>
<td>Storage area</td>
<td>Store in a well-ventilated place. Store away from heat.</td>
</tr>
</tbody>
</table>

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
N-TRIMETHOXYSILYLPROPYL-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol
Safety Data Sheet

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH ACGIH TWA (ppm)</td>
</tr>
<tr>
<td>ACGIH ACGIH STEL (ppm)</td>
</tr>
<tr>
<td>OSHA OSHA PEL (TWA) (mg/m³)</td>
</tr>
<tr>
<td>OSHA OSHA PEL (TWA) (ppm)</td>
</tr>
<tr>
<td>IDLH US IDLH (ppm)</td>
</tr>
<tr>
<td>NIOSH NIOSH REL (TWA) (mg/m³)</td>
</tr>
<tr>
<td>NIOSH NIOSH REL (TWA) (ppm)</td>
</tr>
<tr>
<td>NIOSH NIOSH REL (STEL) (mg/m³)</td>
</tr>
<tr>
<td>NIOSH NIOSH REL (STEL) (ppm)</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls
Appropriate engineering controls: Provide local exhaust or general room ventilation.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves

Eye protection:
Chemical goggles or face shield. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid
Appearance: Liquid.
Molecular mass: 384.08 g/mol
Color: Straw. Amber.
Odor threshold: No data available
Refractive index: No data available
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: < 0 °C
Freezing point: No data available
Boiling point: 68 °C (initial, methanol)
Flash point: 11 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Highly flammable liquid and vapor
Vapor pressure: 50 mm Hg @ 25°C
Relative vapor density at 20 °C: 5.9 (methanol)
Relative density: 0.88
% Volatiles: 50 %
Solubility: Reacts with water. Dissolves.
**N-TRIMETHOXYCISILYLPOLY-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol**

Safety Data Sheet

Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosion limits : 6 - 36.5 vol % (lower; upper: methanol)

9.2. **Other information**

No additional information available

### SECTION 10: Stability and reactivity

10.1. **Reactivity**

No additional information available

10.2. **Chemical stability**

Stable when stored in sealed containers.

10.3. **Possibility of hazardous reactions**

Reacts with water and moisture in air, liberating methanol.

10.4. **Conditions to avoid**

Heat. Sparks. Open flame.

10.5. **Incompatible materials**


10.6. **Hazardous decomposition products**

Methanol. Organic amine vapors.

### SECTION 11: Toxicological information

11.1. **Information on toxicological effects**

Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>N-TRIMETHOXYCISILYLPOLY-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol (143203-33-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
</tr>
</tbody>
</table>

**Methanol (67-56-1)**

| LC50 inhalation rat (ppm)        | 22500 ppm (Exposure time: 8 h) |
| ATE US (oral)                    | 100 mg/kg body weight          |
| ATE US (dermal)                  | 300 mg/kg body weight          |
| ATE US (vapors)                  | 3 mg/l/4h                      |

**3-Chloropropyltrimethoxysilane (2530-87-2)**

| LD50 oral rat                    | 5628 mg/kg                     |
| LD50 dermal rabbit               | 2830 µl/kg                     |

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Reproductive toxicity : Not classified
Specific target organ toxicity – single exposure : Causes damage to organs. May cause drowsiness or dizziness.

Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified


Symptoms/effects after skin contact : Toxic in contact with skin. Causes skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.
N-TRIMETHOXYCYLPROPYL-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol
Safety Data Sheet

Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness. Onset of symptoms may be delayed up to 48 hours.
Chronic symptoms: Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.
Reason for classification: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>&gt; 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>Log Pow</td>
<td>-0.77</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Other adverse effects: This substance may be hazardous to the environment.
Effect on the ozone layer: No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
Sewage disposal recommendations: Do not dispose of waste into sewer.
Product/Packaging disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Additional information: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
UN-No.(DOT): 1992
DOT NA no.: UN1992

14.2. UN proper shipping name
Transport document description: UN1992 Flammable liquids, toxic, n.o.s. (N-TRIMETHOXYCYLPROPYL-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol), 3 (6.1), II
Proper Shipping Name (DOT): Flammable liquids, toxic, n.o.s. (N-TRIMETHOXYCYLPROPYL-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol)
Class (DOT): 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT): II - Medium Danger
Hazard labels (DOT): 3 - Flammable liquid 6.1 - Poison

DOT Packaging Non Bulk (49 CFR 173.xxx): 202
DOT Packaging Bulk (49 CFR 173.xxx): 243
DOT Packaging Exceptions (49 CFR 173.xxx): 150
DOT Symbols: G - Identifies PSN requiring a technical name
14.3. Additional information

Emergency Response Guide (ERG) Number : 131
Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other : 40 - Stow “clear of living quarters”

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

SECTION 15: Regulatory information

15.1. US Federal regulations

N-TRIMETHOXYSSILYLPROPYL-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol (143203-33-2)

TSCA Exemption/Exclusion CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a “technically qualified individual” as defined by 40 CFR 720.3(ee). The use of this material for “commercial purposes” as defined by 40 CFR 720.3(r) is not permitted in the United States.

Methanol (67-56-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313
SARA Section 313 - Emission Reporting 1 %

N-Trimethoxysilylpropyl-n,n-tri-n-butylammonium chloride (143203-33-2)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

3-Chloropropyltrimethoxysilane (2530-87-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Methanol (67-56-1)

Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification

Class B Division 2 - Flammable Liquid
Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects
Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

3-Chloropropyltrimethoxysilane (2530-87-2)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Methanol (67-56-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

3-Chloropropyltrimethoxysilane (2530-87-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations
N-TRIMETHOXYSiLYLPROPYL-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol
Safety Data Sheet

Methanol (67-56-1)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Japanese Poisonous and Deleterious Substances Control Law
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

3-Chloropropyltrimethoxysilane (2530-87-2)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

WARNING: This product can expose you to Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Methanol (67-56-1)

<table>
<thead>
<tr>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significant risk level (NSRL)</th>
<th>Maximum allowable dose level (MADL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Methanol (67-56-1)

<table>
<thead>
<tr>
<th>U.S. - Massachusetts - Right To Know List</th>
<th>U.S. - New Jersey - Right To Know Hazardous Substance List</th>
<th>U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List</th>
<th>U.S. - Pennsylvania - RTK (Right to Know) List</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 16: Other information

Full text of H-phrases:

H225: Highly flammable liquid and vapor
H227: Combustible liquid
H301: Toxic if swallowed
H311: Toxic in contact with skin
H315: Causes skin irritation
H318: Causes serious eye damage
H319: Causes serious eye irritation
H331: Toxic if inhaled
H336: May cause drowsiness or dizziness
H370: Causes damage to organs

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor.

Hazard Rating

Health: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)
N-TRIMETHOXYSILYLPROPYL-N,N,N-TRI-n-BUTYLAMMONIUM CHLORIDE, 50% in methanol
Safety Data Sheet

Physical: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Prepared by safety and environmental affairs.

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SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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